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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/775,249
Filing Date: February 11, 2004
Appellant(s): KIM ET AL.

Robert E. Bushnell

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 07/11/2008, 08/25/2008 and 08/26/2008
and appealing from the Office action mailed on 03/04/2008

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,223,055	Cyr	04/2001
20040110465	Bedingfield	06/2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 21-26, 28-33 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cyr (U.S. 6,223,055), (hereafter Cyr) in view of Bedingfield et al. (U.S. 20040110465), (hereinafter Bedingfield).

Regarding claim 21, Cyr discloses a system for operating wired and wireless phone services interconnectively, the system (wired and wireless system, see Fig. 1) comprising:

a private base station controller (pBSC) (in-building wireless base station 230) which is connected to a public switched telephone network (PSTN) (PSTN 101, see Fig. 1) and a private base station transceiver system (pBTS) (see col. 2, lines 3-8) and provides a mobile communication service to a plurality of mobile communication terminal (120) (see col. 2, line 62- col. 3, line 19; and col. 2, lines 3-9); and

a group exchange (see PBX 140, see Fig. 1) which is connected to the PSTN, and which a plurality of mobile communication terminals (items 120,150 and 120A-D, see Fig. 1) existing in a mobile zone as a management region (in-building, item 110, see Fig. 1) of the pBTS, and provides a public wired phone service () to the mobile communication terminals, and provides a wired phone service to a wired terminal (phone 150 without associated wireless terminal, see col.3, lines 42-56) existing outside the mobile zone (see col. 3, line 20- col. 4, line 19; and col. 5, line 45- col. 6, line 13); but fails specifically to teach an assignment of respective virtual wired phone number and wherein, when receiving a request for an outgoing service from an internal mobile communication terminal, the group exchange changes a caller identification (CID) into the virtual wired phone number assigned to the internal mobile communication terminal, and calls a called terminal via the PSTN.

However, Bedingfield teaches the establishment and usage virtual telephone

number in a wired and wireless system (see Pars. [0017, 0037-40, 0045-48, 0055 and Fig. 2).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 22, as recited in claim 21, Cyr discloses the system, wherein the group exchange calls the mobile communication terminal (PBX rings wired and wireless extensions, see col. 3, lines 31-61); but fails to mention that the extension telephone numbers are respective virtual telephone numbers.

However, Bedingfield teaches the establishment and usage of virtual telephone number in a wired and wireless system (see Pars. [0017, 0037-39, 0045-47 and 0055])

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 23, as recited in claim 21, Cyr discloses a multiple terminating services (simultaneous ringing, see col. 3, lines 55-61); but fails to disclose that a database for storing, for each arbitrary wired phone number, information indicating whether or not each of the wired phone number is a virtual phone number.

However, Bedingfield teaches a database for storing, for each arbitrary wired phone number, information indicating whether or not each said arbitrary of the wired phone number is a virtual phone number (see Pars. [0018 and 0047]).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 24, as recited in claim 23, Cyr discloses the system, wherein the group exchange simultaneously calls the wired terminal corresponding to the wired phone number and a mobile communication terminal when the wired phone number registered with the multiple terminating service and is called (simultaneous ringing, see col. 3, lines 55-61).

Regarding claim 25, as recited in claim 21, Cyr fails to disclose the system, wherein the pBSC comprises a database for storing said each respective virtual wired phone number assigned to each of the mobile communication terminals and a mobile identifier number (MIN) of the mobile communication terminal to which said each respective the virtual wired phone number is assigned.

However, Bedingfield teaches wherein the pBSC comprises a database for storing said each respective virtual wired phone number assigned to each of the mobile communication terminals and a mobile identifier number (MIN) of the

mobile communication terminal to which said each respective the virtual wired phone number is assigned (see Pars. [0018-19 and 0047]).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 26, as recited in claim 21, Cyr fails to disclose the system, wherein the group exchange is connected to the PSTN through No. 7 signaling.

However, Bedingfield teaches connection between PSTN and No. 7 (= SSP and SCP connection with PSTN, see items 36, 38 and 46 in Fig. 2).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 28, as recited in claim 21, Cyr fails to disclose the system, wherein when receiving the request for the outgoing service from the internal mobile communication terminal, the pBSC checks a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests.

However, Bedingfield teaches wherein when receiving the request for an outgoing service from an internal mobile communication terminal, the pBSC

checks a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests (profile includes subscriber service preference, see Par. [0017-18]).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 29, as recited in claim 28, Cyr discloses the system, wherein the pBSC relays an outgoing call to the group exchange when the internal mobile communication terminal requests the private network service, and relays the outgoing call to the public land mobile network (PLMN) when the internal mobile communication terminal requests the public network service (see col. 4, lines 59- col. 5, line 7).

Regarding claim 30, Cyr discloses a method for operating wired and wireless phone services interconnectively, the method comprising the steps of:

assigning, by a group exchange (PBX), phone numbers to a plurality of mobile communication terminals existing in a mobile zone as a management region of a private base station transceiver system (pBTS) (PBX rings wireless and wired extension, see col. 3, lines 30-61);

providing, by the group exchange, a wired phone service to a wired terminal existing outside the mobile zone; and providing, by the group exchange,

public wired phone service to the mobile communication terminals by linking the mobile identifier numbers (MINs) of the mobile communication terminals, see col. 3, lines 30-61); but fails specifically to teach and assignment of respective virtual wired phone numbers and when the group exchange receives a request for an outgoing service from an internal mobile communication terminal, changing, by the group exchange, a caller identification (CID) into the respective virtual wired phone number assigned to the internal mobile communication terminal, and calling a called terminal via a public switched telephone network (PSTN).

However, Bedingfield teaches the establishment and usage of virtual telephone number in a wired and wireless system (see Pars. [0017, 0037-40, 0045-48 and 0055])

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 31, as recited in claim 30 Cyr discloses the method, wherein in the step of providing the public wired phone service, when the group exchange receives an incoming call through a public switched telephone network (PSTN), the group exchange calls the respective mobile communication terminal (col. 3, lines 20-61); but fails to teach virtual wired phone number.

However, Bedingfield teaches the establishment and usage of virtual telephone number in a wired and wireless system (see Pars. [0017, 0037-39, 0045-47 and 0055])

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Bedingfield with the system of Cyr for the benefit of achieving a system that allow the tracking of telephone usage time of devices with virtual directory number (see Bedingfield, Pars. [0055]).

Regarding claim 32, as recited in claim 30, Cyr further discloses the method further comprising the step of simultaneously calling, by the group exchange, the wired terminal corresponding to the wired phone number and the mobile communication terminal when the wired phone number registered with the multiple terminating service and is called (simultaneous ringing, see col. 3, lines 55-61).

Regarding claim 33, as recited in claim 32, Cyr further discloses the method comprising the step of rerouting, by the group exchange, an incoming call to one of a public switched telephone network (PSTN) or a public land mobile network (PLMN) when the called wired terminal and the mobile communication terminal make no response (col. 3, lines 20-61).

Regarding claim 35, as recited in claim 30, Cyr further discloses the method comprising the step of, when a private base station controller (pBSC) receives a request for an internal service from an outgoing mobile communication terminal, checking, by the pBSC, a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests (col.

Regarding claim 36, as recited in claim 35, Cyr further discloses the method further comprising the steps of: relaying, by the pBSC, an outgoing call to the group exchange when the internal mobile communication terminal requests the private network service; and relaying, by the pBSC, the outgoing call to a public land mobile network (PLMN) when the internal mobile communication terminal requests the public network service (col. 3, lines 20-61; and col. 4, line 46- col. 5, line 64).

(10) Response to Argument

Regarding the alleged unpatentability over cited prior arts of Cyr (U.S 6,223,055), (hereafter Cyr) in view of Bedingfield et al. (U.S. 20040110465), (hereinafter Bedingfield), the Examiner will detail the position in which the examination of the cited claims were made.

a. **Regarding claims 21 and 30**, the Appellant argues that the combination of Cyr and Bedingfield fails to disclose the claimed limitations "private base station" and "when receiving a request for an outgoing service from an internal mobile communication terminal, the group exchange changes a caller identification (CID) into the virtual wired phone number assigned to the internal mobile communication terminal, and calls a called terminal via the PSTN"

The Examiner respectfully maintains that the combination of Cyr and Bedingfield clearly renders sufficient support in the cited portion of the reference that parallels to the operating method of the Applicant's claimed invention.

Regarding the claimed limitation "private base station", Cyr clearly details in column 1, line 66- col. 2, line 16; col. 3, lines 1-19 and col. 6, lines 14-67 a wireless office architecture/ in-building communication system that include a wireless base station that may be a single radio communications device or a plurality of distributed radio communication devices; whereby the wireless base station the may include a plurality of radio communication devices in the office architecture/ in-building communication system, is being associated with the private base transceiver station.

The combination of Cyr and Bedingfield also discloses the claimed limitations "when receiving a request for an outgoing service from an internal mobile communication terminal, the group exchange changes a caller identification (CID) into the virtual wired phone number assigned to the internal mobile communication terminal, and calls a called terminal via the PSTN.

Bedingfield, for example, mentions "when receiving a request for an outgoing service from an internal mobile communication terminal (= when wireless subscriber at a conventional wireless telephone number calls a wireline party, via the wireless carrier network 34, see [0048-49]; whereby the wireless subscriber is being associated with the "internal mobile communication terminal"), the group exchange changes a caller identification (CID) into the virtual wired phone number assigned to the internal mobile communication terminal, and calls a called terminal via the PSTN (= the conventional

telephone number is associated with a virtual telephone number within the wireline carrier network; this association is carried out by a database 54 and algorithm disposed within the network 34 operable for associating the conventional wireless telephone number with the virtual telephone number; and the virtual call is routed via the network 32 and PSTN, see [0032-33, 0037, 0039, 0048-49]; whereby the "CID" is being associated with the conventional wireless telephone number; and the database 54 is also being associated with the "group exchange").

Furthermore, Cyr teaches a group exchange 140 connected to a PSTN system 101 (see col. 3, lines 20-42).

The combination of Cyr and Bedingfield clearly shows that a call is made from a wireless communication terminal using a conventional wireless telephone number; the conventional wireless telephone number is changed/associated with a virtual wired telephone number; and the call is eventually routed via PSTN network.

Therefore, the disclosure of Cyr and Bedingfield meets the argued claimed limitations in claims 21 and 30.

b. **Regarding claims 26**, the Appellant argues that the combination of Cyr and Bedingfield fails to disclose the claimed limitations "wherein the group exchange is connected to the PSTN through No. 7 signaling".

The examiner disagrees with such an assertion. Although Cyr teaches a branch exchange 140, which is being associated with the "group exchange", a MAP protocol carried on SS7 link (see col. 3, lines 20-30; and col. 8, lines 20-54), Cry fails explicitly to

mention wherein the group exchange is connected to the PSTN through No. 7 signaling".

Bedingfield teaches "wherein the group exchange is connected to the PSTN through No. 7 signaling" (= network 32 that uses SS7 signaling, communicates with network 34; and network 32 is connected to PSTN 46, see [0032, 0034-35, 0037]; and Fig. 2; whereby the SS7 is being associated with the "No. 7 signaling").

Therefore, the combination of Cyr and Bedingfield discloses the claimed limitations "wherein the group exchange is connected to the PSTN through No. 7 signaling."

c. **Regarding claim 28**, the Appellant argues that the combination of Cyr and Bedingfield fails to disclose the claimed limitations "when receiving the request for the outgoing service from the internal mobile communication terminal; the pBSC checks a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests".

The combination of Cyr and Bedingfield also discloses the claimed limitations when receiving the request for the outgoing service from the internal mobile communication terminal; the pBSC checks a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests.

Bedingfield, for example, mentions "when receiving the request for the outgoing service from the internal mobile communication terminal (= subscriber telephony service

are associated with subscriber's incoming and outgoing telephone calls, see [0033]); the pBSC checks a service type identifier defining which one of a private network service and a public network service the internal mobile communication terminal requests (= wireline telephone service providers, the wireless telephone service provider, and/or the packet voice-based telephone service provider each store a subscriber profile in a database residing in the wireline telephone networks 56, the wireless telephone network 54, and/or the packet voice-based telephone network (not shown), respectively. (Block 64). A telephone call that is intended to be completed to the wireless network is received first in the wireline telephone network 32 (by virtue of the wireless/wireline number association accomplished by Blocks 62, 64, and 68). The wireless telephone number, and/or the packet voice-based telephone number associated with the telephone call is associated with the wireline telephone number to which services are associated (Block 68). The telephone number to which services are associated may be, for example, the subscriber's home or business telephone number. However, embodiments of the present invention are not limited to telephone numbers linked to physical terminating devices in a home or residence. In one embodiment, the telephone number is a "virtual" telephone number created expressly to support the association of advanced services in the wireline network 32 in an embodiment of the present invention. In another embodiment, the telephone number is an actual number that is associated with the subscriber. Although either type of number may be used, for the sake of simplicity in describing embodiments of the present invention, the telephone number to which services are associated will hereinafter be referred to as the "virtual

telephone number; and the service-providing network (the wireline telephone network associated with the virtual directory number) provides advanced telephony services for the call. The SCP 38, by utilizing the subscriber profile disposed within the database 56 residing within the wireline telephone network 32 associated with the virtual telephone number, and an associated algorithm, provides an advanced telephony service to the telephone call. (Block 72). Finally, the SCP 38 or SSP 36 routes the telephone call to the appropriate telecommunications network, such as wireline telephone network 32, wireless telephone network 34, or packet voice-based telephone network (not shown) (Block 74) where the call is terminated to the appropriate wireline telephone or device, wireless telephone or device, or packet voice-based telephone or device, see [0039-40]; whereby the "pBSC" is being associated with wireless communication device; the "service type identifier" is being associated with the subscriber's service profile; and the "private network service and a public network service the internal mobile communication terminal" are being associated with the wireless and wired communication services).

d. **Regarding claim 29**, the Appellant argues that the combination of Cyr and Bedingfield fails to disclose the claimed limitations "relays an outgoing call to the group exchange when the internal mobile communication terminal requests the private network service, and relays the outgoing call to a public land mobile network (PLMN) when the internal mobile communication terminal requests the public network service".

The combination of Cyr and Bedingfield also discloses the claimed limitations "relays an outgoing call to the group exchange when the internal mobile communication

terminal requests the private network service, and relays the outgoing call to a public land mobile network (PLMN) when the internal mobile communication terminal requests the public network service"

Cyr, for example mention the connections between wireless devices in the in-building and out-of- building communication system; and a call routing between wireless terminal 120 and wired extension 150 via the public wireless network 102, PSTN 101 and PBX 140 (see col. 3, lines 20-61; and col. 4, line 59- col. 5, line 7); whereby the "public land mobile network" is being associated with the network 102.

Therefore, the combination of Cyr and Bedingfield discloses the claimed limitations "relays an outgoing call to the group exchange when the internal mobile communication terminal requests the private network service, and relays the outgoing call to a public land mobile network (PLMN) when the internal mobile communication terminal requests the public network service".

e. **Regarding claim 33**, the Applicant argues that the combination of Cyr and Bedingfield fails to disclose the claimed limitations "the step of rerouting, by the group exchange, an incoming call to one of a public switched telephone network (PSTN) [[or]]and a public land mobile network (PLMN) when the called wired terminal and the mobile communication terminal make no response"

The combination of Cyr and Bedingfield also discloses the claimed limitations "the step of rerouting, by the group exchange, an incoming call to one of a public switched

telephone network (PSTN) [[or]] and a public land mobile network (PLMN) when the called wired terminal and the mobile communication terminal make no response"

Cyr, for example mention the connections between wireless devices in the in-building and out-of- building communication system; and a call routing between wireless terminal 120 and wired extension 150 via the public wireless network 102, PSTN 101 and PBX 140 (see col. 3, lines 20-61); whereby the "public land mobile network" is being associated with the network 102.

Therefore, the combination of Cyr and Bedingfield discloses the claimed limitations "the step of rerouting, by the group exchange, an incoming call to one of a public switched telephone network (PSTN) [[or]] and a public land mobile network (PLMN) when the called wired terminal and the mobile communication terminal make no response".

Therefore, the arguments are moot and not persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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